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Comparative Observational Study for Bifurcating aneurysm treatment; open versus endovascular approaches and classical versus new techniques.

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(*) indicates primary project advisor

(**) indicates another student who is declaring the same project as primary for SI

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Introduction & Objectives

- Aneurysm occur in approximately 3.2% of the population with a mean age of 50 years and a 1:1 gender ratio[1]
- Aneurysm rupture causing subarachnoid hemorrhage comprises 5% of all strokes with an estimated mortality rate of 70%[2]
- Surgical management of aneurysms include clipping the neck of the aneurysm, coil embolization, stent assisted coiling, and balloon assisted coiling with new techniques and devises in development[3,4]
- Aneurysms develop at branch points with elevated intravascular turbulence and vessel wall shear stress[5]
- We aim to compare the efficacy and safety of different treatment modalities for bifurcating intracranial aneurysms

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Research Question & Hypothesis

- Research Question
  - In patients with bifurcating cranial aneurysms, which surgical treatment modality is the most effective and safest for treatment of aneurysms at bifurcating arteries
- Hypothesis
  - We believe that coil embolization is the most effective and safest modality for treating non-complicated aneurysms at bifurcating cranial arteries

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Approach and Results

- Retrospective medical chart review
- Patients who underwent surgical management of an intracranial bifurcating aneurysm
- Treatment modalities: coil embolization, stent assisted coiling, balloon assisted coiling, clipping, and other
- Complication Rate of procedure and 5-year survival rate (overall and stratified by aneurysm location)
- Data derived from EPIC charts of patients who met inclusion criteria

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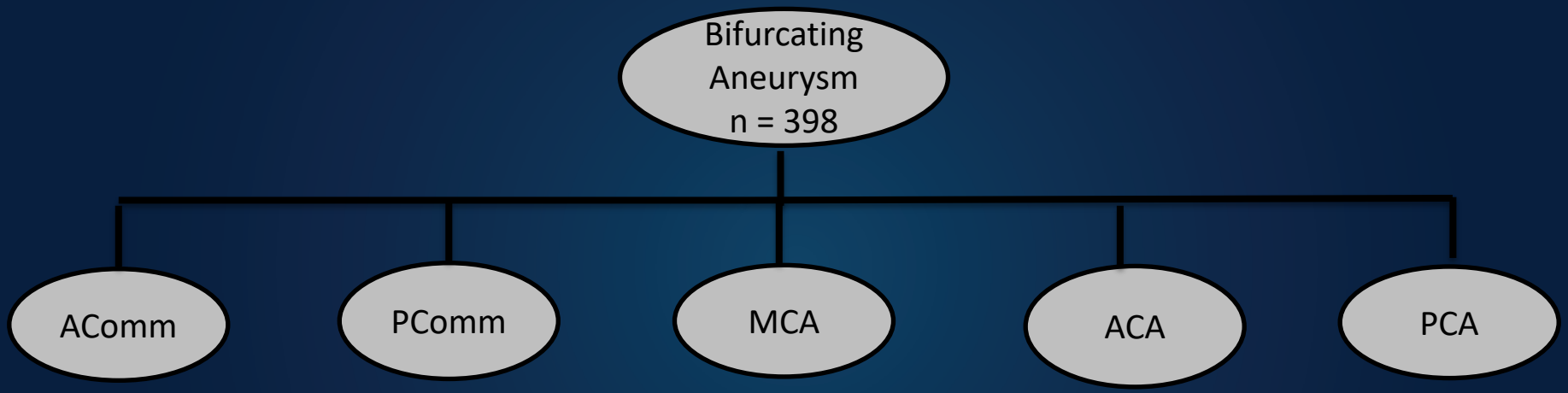
Approach and Results



Treatment Categories

- Coiling
- Stent Assisted Coiling
- Balloon Assisted Coiling
- Clipping
- Other

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Approach & Results

- Analysis
  - Data is currently undergoing data analysis with statistician
- Findings
  - Coil embolism of saccular aneurysms at bifurcations yield lower complications than patients who underwent balloon assisted, stent assisted, or clipping of aneurysms.

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Conclusions

- Intravascular treatment of aneurysms yield a better outcome than those treated with clipping
- Balloon assisted and Stent assisted coiling are more likely to be used in complicated cases
- Coil embolization of aneurysms should be the preferred treatment of bifurcating aneurysms

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